Environmental Assessment

Application for Right-of-Way
Proposed Water Pipeline and Water Discharge
Union Lake Waterfowl Production Area
Polk County, Minnesota
Detroit Lakes Wetland Management District

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United States Fish and Wildlife Service

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SUMMARY

The Union/Lake Sarah Improvement District (LID) has requested a R-O-W permit from the Service in order to maintain facilities, and discharge water on Union Lake WPA, Polk County, Minnesota. The Service is evaluating this request consistent with 50 CFR 29.21 and the National Environmental Policy Act (NEPA) of 1971 and its applicable regulations (40 CFR 1500-1517).

The Service evaluated four alternatives, including the "no action" alternative, that were developed through public meetings and inter-governmental coordination through the existing Sand Hill River Flood Damage Reduction Team. No alternatives were proposed by the public or other government entities that were not fully explored.

The proposed action would grant the LID authorization to maintain a buried pipeline and associated facilities, and a small earth dike on Union Lake WPA, and allow the LID to discharge water from Union/Lake Sarah into a WPA wetland. The LID is seeking authorization for this activity in order to lower the lake levels of both Union Lake and Lake Sarah, where residential flooding is occurring.

The Service is concerned with the impacts to Union Lake WPA relating to waterfowl production, impacts to Endangered/Threatened species in the area (a bald eagle nest), and impacts to downstream wetlands as a result of manipulated water levels.

Following preparation of this EA, the proposed action, as described and mitigated, is not believed to have significant impacts on the human environment and thus an Environmental Impact Statement will not be prepared.

I. PURPOSE AND NEED FOR ACTION

I.A. PURPOSE

In May 2000, the Union/Lake Sarah Improvement District (LID) was issued a temporary special use permit to pump water from Union Lake and discharge that water into the Union Lake Waterfowl Production Area (WPA) in an effort to reduce the lake level and subsequent flooding of residential property on Union Lake and Lake Sarah. At that time, the U.S. Fish and Wildlife Service (Service) completed an Environmental Assessment (EA) entitled, **Proposed Water Pipeline and Water Discharge, Union Lake WPA; FONSI dated 15 May 2000.** That EA contains background information on the history of the issue, and is incorporated by reference as part of this EA (Appendix A.).

In February 2001, the Union/Lake Sarah Improvement District applied to the Service for permanent right-of-way (R-O-W) in order to continue the operation of the pump and pipeline,

as needed, to reduce lake levels and prevent flood damage to lake front property owners. Issuance of R-O-W on Service managed lands is governed by the provisions of Title 50 Code of Federal Regulations part 29.21. The purpose of this EA is to analyze the request for a R-O-W. The EA is being prepared in accordance with the requirements of section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, and the requirements of 50 CFR 29.21-2(a)(4).

I.B. NEED

The LID (applicant) has applied for a R-O-W based on the need to reduce lake levels and subsequent lake-front property damage.

In responding to this request, the Service needs include:

- Protecting the waterfowl production purpose of Union Lake WPA, or other potentially affected WPAs (Erskine);
- Protecting downstream wetlands; and,
- Protecting listed species in the project area.

I.C. Decisions that Need to be Made

The Regional Director will use this EA, along with other supporting documentation, to decide if a R-O-W permit will be issued to the applicant in accordance with 50 CFR 29.21. Additionally, he must decide whether the anticipated impacts on the human environment of the selected alternative are likely to be significant, thus triggering the preparation of an Environmental Impact Statement.

The Regional Director will not directly decide the issue of how to lower the lake levels; whether or not they should be lowered; or, if they are lowered, to what level they are lowered. The issue before the Service is whether to grant the right-of-way, and if granted, to stipulate its operational use to protect the values of the waterfowl production area and the trust resources for which the Service has jurisdiction. If the Regional Director denies the right-of-way permit, it is up to the LID and affected watershed boards to pursue other options to address the residential flooding on Union Lake and Lake Sarah.

I.D. Issues

I.D.1. Public Issues

The major issue for the landowners on Union Lake and Lake Sarah is the protection of property from rising lake levels. At least one property owner would like the water to remain high, as it now provides water access to his property. Property owners living downstream on the different alternatives have varying degrees of concern with unnatural water flows that may impact land use such as grazing, haying, or crop production. There has been little voiced interest or concern regarding this project by the public outside of the immediate project area.

I.D.2. Service Concerns

The Service is concerned about altered water regimes on Service-owned and other wetlands associated with the various alternatives. Manipulating water regimes has the potential to affect water quality, soil erosion, wetland vegetation, invertebrate populations, waterfowl production, fish passage, other wildlife production and use, environmental esthetics, and cultural resources.

The Service is also concerned about maintenance of the earth dike associated with the preferred alternative.

There is a bald eagle nest within one-half mile of the water discharge point on Union Lake WPA.

I.E. Regulatory Permits

All of the action item alternatives (B, C, and D), require multiple additional permits from several Federal, State, and local agencies and entities. If the Service denies the R-O-W request under the Proposed Action (Alternative C), and does not grant a R-O-W under Alternative D (buried line), the applicant will have to seek other remedies where the Service would not be the lead agency. In these instances, the Service will likely play an advisory role through the Army Corps of Engineers' (ACOE) Section 404 (Clean Water Act) permitting process.

All permits, as with the Service's R-O-W permit, will contain stipulations relating to operations, monitoring requirements, and notification, among other things. The Service's R-O-W permit will adopt the stipulations of other permits as part of the R-O-W permit. In the event of conflicting conditions, the more restrictive provisions will apply.

I.E.1. Federal Permits

The applicant must secure a permit from the U.S. ACOE to pump water from Union Lake into another wetland. The ACOE requires such permit by the authority of Section 404 of the Clean Water Act (33 USC 1251 *et. seq*.).

I.E.2. State Permits

A permit from the Department of Natural Resources (DNR) is required for activities in Union Lake [Minnesota Statute 103G - (Work in Public Waters)].
The Board of Water and Soil Resources (BWSR) has oversight authority for this type of project through the Wetlands Conservation Act of 1991 and the authority to promulgate regulations through Minnesota Statute 103G. Actual permitting functions have been delegated to the Sand Hill River Watershed District (SHRWD) and the East Polk Soil and Water Conservation District.

A permit from the State of Minnesota Pollution Control Agency (MPCA) is required under the authority of Section 401 of the Clean Water Act (33 USC 1251 *et. seq*.)

I.E.3. Local Permits

A permit is required from the Sand Hill River Watershed District through delegated authority from the State of Minnesota, Board of Water and Soil Resources.

A permit is required by the East Polk Soil and Water Conservation District through delegated authority from the State of Minnesota, Board of Water and Soil Resources.

II. Alternatives

II.A. Alternatives Eliminated from Detailed Study

There were no additional alternatives raised by the public or other agencies that were not fully considered.

II.B. Alternatives Considered

II.B.1. Alternative A. No Action

Under this alternative, the Service would deny the R-O-W request and no permit would be issued. Pumping under the current special use permit would not be allowed to resume in 2002, and all pipeline facilities would be removed from the Union Lake WPA by July 15, 2002. The permitee would rehabilitate the WPA.

The applicant (LID) would have to pursue other options in order to lower the level of Union/Lake Sarah. In pursuing other options, the Service may or may not, be involved in a regulatory capacity.

II.B.2. Alternative B. Restore the Historic Outlet

This alternative would restore what is commonly held to be the historic outlet that drains north from Lake Sarah at an approximate elevation of 1213.9 feet. According to local, long-time residents, the channel was plugged and farmed through early in the 20th century.

This alternative would restore the outlet to a prescribed elevation and result in the reestablishment of the watercourse north from Lake Sarah, under Polk County Highway 41, and into Bee Lake. Water would then ultimately flow to Maple Lake, the Red Lake River, and the Red River of the North (Figure 1). Water would flow from Lake Sarah anytime lake elevations rose above the outlet elevation. Under the restoration alternative, the Union/Lake Sarah watershed would be part of the Red Lake Watershed, as it has presumably been.

The Service does not have the authority to require this action. However, evaluation of this obvious alternative is necessary for the integrity of the EA [40 CFR 1502.14(c)]. The decision to pursue restoration of the natural outlet lies with the LID and the Sand Hill River and Red Lake Watershed District Boards. This alternative is presented and evaluated because it is an obvious alternative to pumping water through the WPA thus avoiding any potential impacts that could occur on the WPA or to any trust resources that may be affected.

II.B.3. Alternative C. Pump Water from Union Lake through Union Lake WPA (proposed action)

This alternative would grant a long-term right-of-way permit to the LID in order to continue stipulated operation of the pump on Union Lake when the lake elevation exceeds the established ordinary high water elevation of 1211.4 feet. This action was

permitted, with stipulations, by the Service under the emergency, and temporary, special use permit (#32586-0004) issued in May 2000.

Under this alternative, the applicant (LID) would be granted right-of-way on Union Lake WPA to maintain approximately 1500 feet of buried pipeline that discharges into the Type V (Circular 39) wetland on Union Lake WPA. A low-level dike on the south side of the wetland is required for approximately 200 feet in order to direct the water into the Sand Hill River Watershed and prevent return flow to Union Lake. The top of the dike will be maintained at an approximate elevation of 1232.3 feet; About 0.8 feet above the water surface of the discharge wetland when the pump is operating at 10 cubic feet per second. Operation of the pump would be governed by Service R-O-W stipulations as well as conditions of other Federal, State, and local permits. The LID would be permitted to pump water through the WPA between May 1 and October 31 annually, at a rate not exceeding 10 cubic feet per second. Pumping will not be permitted during the winter months, or anytime the lake surface elevation is at, or below 1211.4 feet. Pumping may be temporarily suspended by the Service for resource protection or public safety. Downstream surface elevations that will trigger suspension of pumping will be established to prevent contributing additional flood waters to the Sand Hill River during periods of high water.

Under this alternative, water pumped into Union Lake WPA flows southwest once the discharge wetland surface elevation reaches approximately 1231 feet. The water flows through a buried pipeline around the large Type V wetland in the SE 1/4 of Section 3, Garden Township, and continues through a series of privately-owned wetlands for approximately seven miles where the watercourse joins the Sand Hill River (Figure 2). Under this alternative, the Union/Lake Sarah sub-watershed is part of the Sand Hill River Watershed.

II.B.4 Alternative D. Buried Water Pipeline Around Union Lake WPA Wetlands

This alternative would utilize the existing pump in Union Lake to reduce water levels by pumping water through a buried pipeline around the wetlands on the WPA. Under this alternative, the Service would still issue a R-O-W permit; however, stipulations would dictate that the pipeline be buried around the WPA wetlands as opposed to discharging into the surface wetland as in Alternative C.

Under this alternative, approximately 5200 feet of pipeline would be buried across the Union Lake WPA (Figure 3). The watercourse for this alternative would be the same as Alternative C, once the water exited the buried portion of the line. Following

installation, the disturbed area on the WPA would be rehabilitated and seeded with a mix of native prairie species.

Operation of the pump in Union Lake would be operated in accordance with the stipulations of the Service's R-O-W permit as well as conditions of other Federal State, and local permits.

III. Affected Environment

Union Lake WPA is located in south-central Polk County, Minnesota (Appendix B). The WPA lies within the transition zone between the deciduous forest to the east and the tall grass prairie to the west. The WPA has historically been within the Red Lake River Watershed that flows essentially westward to its confluence with the Red River of the North. Land use within the project area is primarily agricultural, dominated by crop production. Other land uses in the area include recreation and low density residential. Union Lake WPA was first established in 1967 with the acquisition of 151 acres. In 1996, an additional 159 acres was acquired, bringing the total area of this WPA to the present 310 acres.

The habitat of Union Lake WPA includes numerous wetlands varying from temporary (Type I) to permanent (Type V), and upland habitat cover consisting of a mix of grasses and forbs, both native and tame. Woody species of both trees and shrubs are encroaching over vast portions of the WPA uplands (Appendix C, aerial photograph).

The habitat of the WPA provides for the full range of waterfowl production needs: small wetlands for pair bonding and mating, upland and over water nesting cover, and larger wetlands for brood rearing. Use of the WPA for all, or portions of the production cycle was documented in 2000 for Canada geese, wood ducks, mallards, blue-winged teal, and ring-necked ducks (Charland and Sprenger 2000). Other recorded waterfowl species using the WPA include Northern pintail, American wigeon, redhead, and canvasback.

Other notable wildlife use of the WPA includes coot, pied-billed grebe, sora, Virginia rail, Wilson's phalarope, spotted sandpiper, green heron, great blue heron, common snipe, great-horned owl, red-tailed hawk, American kestrel, Northern harrier, broad-winged hawk, whitetail deer, moose, red fox, snowshoe hare, cottontail and jack rabbit, mink, beaver, muskrat, river otter, striped skunk, racoon, and weasel. Numerous passerine birds and additional small mammals also use the area. Fathead minnows are present in the WPA wetlands.

Three Federally listed Threatened species occur in Polk County, Minnesota. An active bald eagle nest is maintained on the WPA. Two young were believed to be fledged from this nest in 2000. Gray

wolves may occasionally use the WPA however, their presence on this site has not been documented. Western prairie fringed orchids have not been documented on the WPA.

The wetland on the WPA most directly affected by this proposal has a permanent water regime characterized by open water and cattail fringe. Maximum depth of the wetland is approximately seven feet. The open water surface area has been approximately 26 acres in recent years. Total wetland area of this basin is approximately 41 acres. The wetland naturally drains to the south through a series of wetlands into Union Lake. At sufficient surface elevation (about 1231'), run- out will also occur through a coulee to the southwest, where the water continues through a series of temporary, seasonal, semi-permanent, and permanent wetlands until it reaches the Sand Hill River, approximately seven miles distant. As with the uplands, this watercourse has been extensively altered to fit human needs. Ditching, culverts, and underground pipeline all work to constrain this watercourse between the WPA and Sand Hill River.

IV. Environmental Consequences

Environmental consequences for all alternatives are summarized in Table 1.

IV.A. Alternative A. No Action

Under this alternative, impacts to Union Lake WPA would be limited to those direct disturbances resulting from removal of the existing pipeline and earth berm. The Service would deny the request for R-O-W and the existing facilities would have to be removed by the applicant prior to July 15, 2002. As a result of the removal of facilities, surface disturbance to the vegetation within the buried pipeline R-O-W would occur. This area was seeded with a native-source prairie mix in the Spring of 2001. As it generally requires several years after seeding for a reconstructed prairie to flourish, these impacts are minor. Following removal of the pipeline, the area would be seeded with a native prairie mix.

Wildlife disturbance and temporary displacement would occur in the immediate vicinity of the buried pipeline R-O-W while work was occurring to remove the facilities. These direct impacts would be temporary and minor.

The Service's concern for impacts on environmental esthetics would be minimized with this alternative as opposed to the proposed action. The above-ground portion of the existing pipeline and the diffuser in the Union Lake WPA wetland would be removed. Once vegetated with a native prairie seed mix, the area would reflect a principally natural wetland/prairie/forest environment.

This alternative would not provide property owners relief from high water levels. Properties would continue to be inundated until the lake levels drop of their own accord.

IV.A.1. Listed Species

Disturbance of the eagle pair during the nesting season may occur if the birds were to use this nest site in 2002. Under this alternative, the Service would work with the LID on timing the removal activities so as to minimize any chance for adverse effects on the eagle pair.

IV.A.2. Cultural Resources

No impacts to cultural resources or historic sites would occur under this alternative. Prior to the construction of the pipeline under the emergency permit, SHPO input was obtained concluding that no known sites eligible for protection would be impacted. Construction of the pipeline did not uncover any previously unknown cultural resources.

IV.A.3. Cumulative Impacts

The cumulative impacts of this alternative on the watershed, and the region encompassed by the Detroit Lakes Wetland Management District are expected to be minimal. Lasting effects beyond the immediate project area are not anticipated.

IV.A.4. Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 59 FR 7629 (1994), directs federal agencies to incorporate environmental justice in their decision making process. Federal agencies are directed to identify and address as appropriate, any disproportionately high and adverse environmental effects of their programs, policies, and activities on minority or low-income populations.

No environmental justice issues exist for this alternative. There are no known concentrations of minority populations in the project area, nor are there identifiable low-income groups with incomes significantly below the local average.

IV.B. Alternative B. Restore the Historic Outlet

Under this alternative, the purpose and need of lowering the lake levels would be realized by installing what amounts to a spillway, at a prescribed elevation north from Lake Sarah. While

the elevation of Union Lake is generally two-tenths feet below that of Lake Sarah, the hydrological connection is believed to be sufficient to also lower Union Lake over time. Any time water levels rose above the prescribed elevation in Lake Sarah, run-out would occur.

As this watercourse north from Lake Sarah has been extensively altered and farmed, significant erosion and sedimentation would be expected to occur in the waterway downstream unless mitigated. Once the waterway is established and vegetated, adverse effects on water quality and water chemistry are not expected.

Impacts to the Union Lake WPA would be the same as those under the No Action alternative and be limited to the removal of the existing facilities. Impacts to other WPAs would occur as a result of implementing this alternative as the Erskine WPA Complex lies within the downstream drainage of water flowing from Lake Sarah to the Red Lake River.

Increases in water volumes are of concern to downstream property owners along this alternative. Prior to pursuit of this alternative, the LID along with the Red Lake Watershed District Board would presumably obtain a hydrological analysis in order to model and predict the increased flows. The Service is not concerned with increased flows through the Erskine WPA as this alternative presumably represents a return to historic, natural conditions. Additionally, the drainage area of Union/Lake Sarah is less than 25 square miles. Downstream impacts due to increased flows from this basin would likely become indiscernible as one moved downstream in the watershed.

Erskine WPA is large in size and contains a diverse array of wetland habitats and associated uplands. The WPA provides for the full range of waterfowl production needs. A change in water levels on Bee Lake would not be expected to impact the waterfowl production capabilities of the WPA in total. Water levels would stabilize in downstream wetlands following the initial release of water under this alternative. Thereafter, downstream wetland water levels would fluctuate seasonally and from year to year, synchronous with climatic conditions. Long-term impacts to invertebrates and wetland vegetation are not expected. Impacts to other wildlife using Erskine WPA by this change in water supply are not expected to be discernible.

The Service is concerned about fish passage issues on all of its WPAs. Generally, the Service is most interested in preventing fish passage into WPA wetlands. Fathead minnows, among other species, are undesirable pests in WPA wetlands and directly compete with nesting hens and ducklings for invertebrate foods. Since the Erskine WPA drainage is connected to a ditch system creating a surface connection to Maple Lake and its fish populations, additional water from Lake Sarah will not likely impact fish passage. In all likelihood, physical barriers downstream of Bee Lake would be required to exclude fish, with or without the volume contributed from Lake Sarah.

The Service's concern for impacts on environmental esthetics would be minimized with this alternative as opposed to the proposed action. The above-ground portion of the existing pipeline and the diffuser in the Union Lake WPA wetland would be removed. Once vegetated with a native prairie seed mix, the area would reflect a principally natural wetland/prairie/forest environment.

IV.B.1. Listed Species

No adverse impacts to the federally listed Threatened species occurring in Polk County are anticipated under this alternative. Disturbance of the eagle pair during the nesting season may occur during removal of facilities from Union lake WPA if the birds were to use this nest site in 2002. Under this alternative, the Service would work with the LID on timing the removal activities so as to minimize any chance for adverse effects on the eagle pair.

IV.B.2. Cultural Resources

Cultural resource consultation with the State Historic Preservation Officer would be required following final design for construction of this alternative.

IV.B.3. Cumulative Impacts

Cumulative impacts from this alternative from actions that could occur in the Red Lake Watershed as a result of increased water volumes are not expected. The Union/Lake Sarah Watershed is less than 25 square miles, and following initial release and draw-down of Lake Sarah, downstream impacts are likely to quickly become indiscernible as one looks further down the watershed.

The sub-watersheds of the Red River of the North, including Red Lake, are actively involved in implementing flood damage reduction and natural resource enhancement projects consistent with the Red River Basin Flood Damage Reduction Work Group Mediation Agreement of 1998. It is not anticipated that the water volumes contributed by Union/Lake Sarah into the Red Lake Watershed will result in the need for new, or modified flood damage reduction projects that would then create an entirely new suite of impacts.

IV.B.4. Environmental Justice

Same as Alternative A.

IV.C. Alternative C. Pump Water from Union Lake through Union Lake WPA (Proposed Action)

Direct impacts brought about by implementing this alternative would be to wetland water levels, water quality, overall wetland hydrology, and the footprint of the necessary earth dike on the south side of the wetland. The water level in the discharge wetland on Union Lake WPA, and those throughout the downstream watercourse, would be held at higher, and presumably more stable, levels during the pumping periods than would normally be expected. Wetlands tend to go through a drying period from early summer to fall, which would be disrupted by the pumping process. This drying period is important in the function of wetlands as it affects nutrient cycling and ultimately wetland productivity. Concern is greatest on temporary and semi-permanent wetlands where effects would presumably be more pronounced than in a wetland with a permanent water regime. Concern has been raised about the indirect impacts of stabilizing water levels relating to nutrient cycling, water quality, soil erosion, wetland vegetation, invertebrate populations, and ultimately waterfowl production in the Union Lake WPA discharge wetland and those downstream.

While concern over these potential impacts is warranted, it is believed that these impacts will be both temporary and minor. Pumping water from Union Lake will only occur when the lake surface elevation exceeds 1211.4 feet; That will presumably only occur synchronous with a wet climatic cycle which may only occur as infrequently as every 20-100 years, or more. Since the alteration of the natural outlet in the early part of the century, this is apparently the first time that high water levels in the lakes have been a serious issue. Given this, it is unlikely that hydrology of downstream wetlands will be significantly altered over time so as to cause lasting impacts to the water regime, and thus function, of the downstream wetland basins. During dry periods, wetlands will dry as naturally as the current system allows, as water will not be pumped from Union Lake. Perhaps at most, a one year delay in the drying of downstream wetlands may be experienced as Union Lake is brought down coincident with the onset of a drying climatic cycle. The direct or indirect impacts of such a scenario are not believed to be significant on any given wetland in the drainage, nor on the drainage in a cumulative sense.

Water quality monitoring as required by the existing pumping permits has not demonstrated any significant change in water quality/chemistry due to the pumping of water from Union Lake. Monitoring programs will continue to be required under this alternative for the ACOE, MDNR, and MPCA permits.

The earth dike required to prevent return flow to Union Lake would cover approximately 0.03 acres of vegetation and be maintained at an approximate elevation of 1232.3 feet (approximately 0.8 feet above the wetland water surface level at run-out). Direct negative impacts will occur to vegetation but will be mitigated by seeding the dike with a prairie plant mix approved by the Service. While the dike will allow the surface elevation to rise sufficiently

to direct run-out to the southwest, the dike falls far short of removing the hydrological connection to the wetlands to the south of the discharge wetland. Seepage persists from the discharge wetland, albeit at a reduced level. Impacts to these wetlands as a result of the project are therefore believed to be both temporary and minor.

Waterfowl production on Union Lake WPA and throughout the downstream corridor is not expected to be significantly affected by the pumping project. Stabilized water levels may benefit over-water nesting species, and the WPA provides a suite of wetland habitat types for waterfowl production. Observations during the emergency pumping that occurred under the special use permit, indicate continued use of the discharge wetland by those waterfowl and waterbird species that would be expected. There was no discernible difference in use of the discharge wetland and the similar Type V wetland located to the immediate north (Charland and Sprenger, 2000).

The Service is concerned about fish passage issues on all of its WPAs. Generally, the Service is most interested in preventing fish passage into WPA wetlands. Fathead minnows, among other species, are undesirable pests in WPA wetlands and directly compete with nesting hens and ducklings for invertebrate foods. Creating surface water connections from WPA wetlands to road ditches and other watercourses is of concern to the Service. However, fathead minnows are already present in the discharge wetland of Union Lake WPA. Experience indicates that during prolonged wet climatic cycles, fathead minnows are capable of exploiting the smallest of water connections, colonizing virtually every semi-permanent and permanent wetland basin in the District. Absent construction of physical barriers, landscape-scale drying of wetland basins, and chemical control, fathead minnows will likely remain an unwanted member of the District ecosystem. The potential also exists to transport tiny fish, eggs, or sac fry stages of species occurring in Union Lake, through the pump, into the WPA wetland. Screened intakes, required by MNDNR, mitigate this potential impact. This project is not expected to impact fish passage issues on Union Lake WPA to any detectable degree.

Concern has been raised over the esthetics of the terminus of the pipeline and diffuser on the WPA. The structure of the discharge point and diffuser are mitigating measures to minimize impacts to the bottom of the discharge wetland. The current configuration minimizes any sedimentation or other water quality issues that could arise by disruption of the basin sediments brought about by an underwater, and thus out of sight, discharge. Some visitors to the WPA may find these facilities objectionable.

Increased water volumes to downstream property owners is a concern under this alternative. The LID and Sand Hill River Watershed District Board, remedied these concerns prior to the onset of pumping under the emergency special use permit.

Downstream checkpoints at two locations are monitored during pumping periods. Should water levels at either site exceed the levels specified in the ACOE, DNR, and SHRWD permit, pumping will cease regardless of the level of Union Lake.

IV.C.1. Listed Species

No impact to the bald eagle nest on the WPA is expected. The eagle pair was apparently successful in fledging two young in 2000, while the pump was in operation. Charland and Sprenger observed two nearly full-grown juvenile bald eagles in the nest in early June, and observed two immature bald eagles flying over the WPA in mid-August. This alternative is not expected to impact any other species listed under the Endangered Species Act. A complete Section 7 consultation is appended to this EA (Appendix D).

IV.C.2. Cultural Resources

Cultural resource clearance from the SHPO was obtained for this project prior to initial construction under the emergency special use permit. There are no impacts to known cultural resources or historic properties eligible for, or listed on, the National Register of Historic Places.

IV.C.3. Cumulative Impacts

Cumulative impacts from this alternative from actions that could occur in the Sand Hill River Watershed as a result of increased water volumes are not expected.

The sub-watersheds of the Red River of the North, including Sand Hill River, are actively involved in implementing flood damage reduction and natural resource enhancement projects consistent with the Red River Basin Flood Damage Reduction Work Group Mediation Agreement of 1998. Due to the operational plan for the pumping and the ties to the downstream triggers, it is not anticipated that the water volumes contributed by Union/Lake Sarah into the Sand Hill River will result in the need for new, or modified flood damage reduction projects that would then create an entirely new suite of impacts.

Cumulative impacts on the downstream wetland basins directly impacted by the water pumping project are not anticipated to be discernible over the long-term. The pumping of water through Union Lake WPA is inextricably linked to the prevailing area climatic pattern and these ramifications have been discussed in detail earlier in the document (IV.C.).

IV.C.4. Environmental Justice

Same as Alternative A.

IV.D. Alternative D. Buried Water Pipeline Around Union Lake WPA Wetlands

Under this alternative, direct impacts to Union Lake WPA would be limited to those disturbance issues directly related to the construction of the buried pipeline across the WPA. During the construction phase, wildlife will be displaced from the immediate area, and approximately 3.6 acres (5200 feet long x 30 feet wide) of surface vegetation would be disturbed. Since the discharge wetland on Union Lake WPA and Union/Lake Sarah are in separate sub-watersheds, piping water around the WPA wetland is not expected to affect the hydrology or water quality of Union Lake WPA. No impacts to wetland vegetation, invertebrate populations, fish passage, or waterfowl production are anticipated on Union Lake WPA.

Impacts to the hydrology and related wetland productivity, nutrient cycling, and waterfowl production have been raised as concerns, especially for downstream wetlands that have temporary or semi-permanent water regimes. While impacts to permanent wetlands may be minor, greater concern is warranted where the potential exists to change the water regime of a wetland, or series of wetlands. However, pumping water from Union Lake will only occur when the lake surface elevation exceeds 1211.4 feet which will presumably occur synchronous with a wet climatic cycle. Given this, it is unlikely that hydrology of downstream wetlands will be significantly altered over time, as to cause any lasting impacts to the water regime and subsequent function of each wetland basin or the drainage in a cumulative sense. During dry periods, wetlands will dry as water will not be pumped from Union Lake. Thus, this project will not artificially maintain wetland water levels significantly above what would be expected in the system absent the pumping project. Perhaps at most, a one year delay in the drying of downstream wetlands may be experienced as Union Lake is brought down coincident with the onset of a drying climatic cycle. The impacts of such a scenario are believed to be temporary and minor.

Soil erosion may occur as a result of the construction activities or following construction. Engineering design, specific location of the line, and other mitigating measures would be necessary to ensure on-site erosion potential is minimized. If the R-O-W would cross any existing wetlands, mitigating measures to prevent siltation or other disturbances to water quality or hydrology of the wetlands would be necessary. Deliberate pipeline routing and implementing best management practices during construction should minimize the potential for creating significant sub-terranian flow along the pipeline.

The Service's concern for impacts on environmental esthetics would be lessened with this alternative as opposed to the proposed action. The above-ground portion of the existing pipeline and the diffuser in the Union Lake WPA wetland would be removed. Once vegetated with a native prairie seed mix, the area would reflect a principally natural wetland/prairie/forest environment.

Increased water volumes to downstream property owners is a concern under this alternative. The LID and Sand Hill River Watershed District Board, remedied these concerns prior to the onset of pumping under the emergency special use permit. Downstream checkpoints at two locations are monitored during pumping periods. Should water levels at either site exceed the levels specified in the ACOE, DNR, and SHRWD permit, pumping will cease regardless of the level of Union Lake.

IV.D.1. Listed Species

This alternative is not expected to impact the bald eagle nest or any other listed species on the WPA. Disturbance to nesting eagles would be minimized by timing of the construction to avoid the nesting period.

IV.D.2. Cultural Resources

Cultural resources may be affected along the R-O-W for this alternative. Following submission of detailed construction plans, the cultural resource clearance would be required from the State Historic Preservation Officer.

IV.D.3. Cumulative Impacts

Same as Alternative C.

IV.D.4. Environmental Justice

Same as Alternative A.

Table 1. Summary of Anticipated Relative Impacts by Alternative

Issue	Alternative A (No Action)	Alternative B (Restore Historic Outlet)	Alternative C (Proposed Action)	Alternative D (Pipe Around)
Wetland Water Regimes	**no effect**	**low potential impacts - signifies a return to some historic condition**	**low potential impacts - pumping is linked to climatic cycle**	**same as Alt. C**
Water Quality	**no effect**	**medium to high potential impacts until the channel is well established - should be temporary**	**low to high potential impacts if Union Lake water quality should deteriorate**	**same as Alt. C**
Soil Erosion	**no effect**	**medium to high potential impacts until the channel is well established - should be temporary**	**low potential impacts along buried line**	**same as Alt.C**
Wetland Vegetation	**no effect**	**low potential for short-term impacts**	**same as Alt. B**	**same as Alt. B**
Aquatic Invertebrate Populations	**no effect**	**no effect**	**no effect**	**no effect**
Waterfowl Production	**no effect**	**low potential impacts for over-water nests**	**same as Alt. B**	**no effect**
Fish Passage	**no effect**	**low potential effect of creating additional movement opportunities for undesirable species**	**same as Alt. B**	**no effect**

Issue	Alternative A (No Action)	Alternative B (Restore Historic Outlet)	Alternative C (Proposed Action)	Alternative D (Pipe Around)
Other Wildlife Production	**low potential effects due to disturbance - minor and temporary**	**same as Alt. A**	**no effect**	**same as Alt. A**
Environmental Aesthetics	**improved on WPA with removal of diffuser**	**same as Alt. A**	**some may find diffuser on WPA objectionable**	**same as Alt. A**
Cultural Resources	**no effect**	**survey required**	**no effect**	**survey required**
Endangered Threatened Species	**low potential for nesting bald eagles - easily mitigated**	**same as Alt A**	**no discernable effect on nesting bald eagles**	**same as Alt A**
Environmental Justice	**no effect**	**no effect**	**no effect**	**no effect**
Cumulative Impacts	**no direct effects - cumulative impacts would be due to the selected action alternative**	**low potential for additional projects being required in the watershed due to anticipated volume of water**	**no discernable cumulative impacts brought about by additional projects due to downstream triggers/controls**	**same as Alt. C**

V. Preparers

This assessment was prepared by Mark Chase, Manager, Detroit Lakes Wetland Management District, Detroit Lakes, Minnesota. Mr. Chase has more than 15 years experience with the Service working for the National Wildlife Refuge System.

VI. Consultation and Coordination with Others

The Sand Hill River Watershed District Board of Managers and Flood Damage Reduction Team (FDRT) have been actively involved with the Service and other entities in seeking remedies for this situation. Other agency input has come chiefly through the FDRT where the State of

Minnesota through the Department of Natural Resources, Board of Soil and Water Conservation, and Pollution Control Agency is represented. The U.S. Army Corps of Engineers, and Ducks Unlimited, Inc. have also been active participants through the FDRT.

A public meeting/open house was held in Erskine, Minnesota, on May 4, 2001, in order to address public concerns and seek public input on issues involved with the long-term right-of-way aspect of this project. The meeting was attended by approximately 60 people, all of whom were apparent property owners on Union/Lake Sarah, and belonged to the Union/Lake Sarah Improvement District. Attendees were asked to comment on three proposed alternatives and identify additional alternatives for consideration. No additional alternatives were identified. It was the overwhelming, though not unanimous, opinion of the attendees that the R-O-W permit to continue operation of the pump be granted by the Service. Many attendees expressed interest in ultimately pursuing the restoration of the historic outlet from Lake Sarah.

VII. Public Comments

A Draft EA was released for public comment from 10 October 2001, through 17 November 2001. Notices were published in two local newspapers (Erskine and Detroit Lakes) and on the District's internet web page. Comments were received from only one household in the area. General comments question whether the pumping project as permitted, or at any practicable level, can prevent flood damages to the lakeshore homes. The comments also question the financial responsibility of the LID for removal of facilities on Union Lake WPA should the pumping permit be denied. Several specific comments were suggested throughout the document. Where germaine to the outcome of the analysis, or where clarification is enhanced, minor changes to the text, consistent with the public comments have occurred.

VIII. References Cited

Charland, P. and Sprenger, M.; Union Lake Waterfowl Production Area Monitoring in Response to Union/Sarah Lake Improvement Association Water Level Reduction Project; U.S. Fish and Wildlife Service; unpublished report; April 2001.